

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 53. (Cancelled)

54. (Previously Presented) A TV observation system for an endoscope, comprising:

an endoscope;

a TV camera; and

a light source,

wherein the endoscope has an insertion part having a thin and long shape, a holding part continuously extending from a proximal end of the insertion part, an eyepiece section formed on the holding part, a light guide that introduces illumination to a distal end of the insertion part, a light source connecting section formed on the holding part to achieve removable connection of the light source,

wherein the TV camera has an image pickup element and said TV camera is optically connected to the eyepiece section of the endoscope to receive an optical image through said eyepiece section, and

wherein the light source comprises a plurality of LEDs, said light source is removably connected to the light source connecting section, and the light source supplies illumination light to the light guide of the endoscope.

55. (Previously Presented) A TV observation system for an endoscope according to claim 54, wherein the light source further comprises an optical element that compounds light emitted from the plurality of LEDs.

56. (Previously Presented) A TV observation system for an endoscope according to claim 54, wherein the TV camera further comprises a battery that supplies an electric current to the light source.

57. (Previously Presented) A TV observation system for an endoscope according to claim 54, wherein the light source further comprises a control mechanism that controls electric currents applied to the plurality of LEDs, so that amounts of light emission of the LEDs are set in a desired ratio.

58. (Previously Presented) A TV observation system for an endoscope according to claim 54, wherein the light source is configured to sequentially emit a light of at least three colors, and comprises a LED that emits red light, a LED that emits green light, and a LED that emits blue light.

59. (Withdrawn) A TV observation system for an endoscope according to claim 55, wherein the optical element is a prism that has a cubic shape made of two right-angled prisms cemented together at fitting surfaces, and the fitting surfaces are processed with a bandpass coating, which has a characteristic to transmit rays with predetermined wavelengths and to reflect remaining rays.

60. (Withdrawn) A TV observation system for an endoscope according to claim 55, wherein the optical element is a planar-plate optical member having a fine pattern of grooves engraved on a surface thereof, and compounds light emitted from the plurality of LEDs using a diffraction effect.

61. (Previously Presented) A TV observation system for an endoscope, comprising:  
  
an endoscope;  
  
a TV camera; and  
  
a light source,

wherein the endoscope has an insertion part having a thin and long shape, a holding part continuously extending from a proximal end of the insertion part, an eyepiece section formed on the holding part, a light guide that introduces illumination light to a distal end of the insertion part, a light source connecting section formed on the holding part to achieve removable connection of the light source,

wherein the TV camera has an image pickup element and said TV camera is optically connected to the eyepiece section of the endoscope to receive an optical image through said eyepiece section,, and

wherein the light source comprises a plurality of LEDs, and said light source is integrally constructed with the TV camera.

62. (Previously Presented) A TV observation system for an endoscope according to claim 61, wherein the TV camera further comprises a battery that supplies an electric current to the light source.

63. (Previously Presented) A TV observation system for an endoscope according to claim 61, wherein the light source further comprises a control mechanism that controls electric currents applied to the plurality of LEDs, so that amounts of light emission of the LEDs are set in a desired ratio.

64. (Previously Presented) A TV observation system for an endoscope according to claim 61, wherein the light source is configured to sequentially emit light of at least three colors, and comprises a LED that emits red light, a LED that emits green light, and a LED that emits blue light.

65. (Previously Presented) A TV observation system for an endoscope according to claim 61, further comprising an optical element that compounds light emitted from the plurality of LEDs.

66. (Withdrawn) A TV observation system for an endoscope according to claim 65, wherein the optical element is a prism that has a cubic shape made of two right-angled prisms cemented together at fitting surfaces, and the fitting surfaces are processed with a bandpass coating, which has a characteristic to transmit rays with predetermined wavelengths and to reflect remaining rays.

67. (Withdrawn) A TV observation system for an endoscope according to claim 65, wherein the optical element is a planar-plate optical member having a fine pattern of grooves engraved on a surface thereof, and compounds light emitted from the plurality of LEDs using a diffraction effect.

68. (Previously Presented) A light source mounted on an endoscope that comprises an insertion part having a thin and long shape, a holding part continuously extending from a proximal end of the insertion part, an eyepiece section formed on the holding part and providing an optical connector to attach a TV camera to receive an optical image therethrough, a light guide that introduces illumination light to a distal end of the insertion part, a light source connecting section formed on the holding part to achieve removable connection of the light source,

the light source comprising a plurality of LEDs and supplies illumination light to the light guide of the endoscope.

69. (Previously Presented) A light source according to claim 68, further comprising an optical element that compounds light emitted from the plurality of LEDs.

70. (Previously Presented) A light source according to claim 68, further comprising a control mechanism that controls electric current applied to the plurality of LEDs, so that amounts of light emission of the LEDs are set in a desired ratio.

71. (Withdrawn) A light source according to claim 69, wherein the optical element is a prism that has a cubic shape made of two right angled prisms cemented together at fitting surfaces, and the fitting surfaces are processed with a bandpass coating, which has a characteristic to transmit rays with predetermined wavelengths and to reflect remaining rays.

72. (Withdrawn) A light source according to claim 69, wherein the optical element is a planar-plate optical member having a fine pattern of grooves engraved on a surface thereof, and compounds light emitted from the plurality of LEDs using a diffraction effect.

73. (Previously Presented) An endoscope system, comprising:

an endoscope having a proximal end and a distal end;

a TV camera attachment section having an end structured to attach to and detach from said proximal end of said endoscope, said TV camera attachment section comprising:

a TV camera having an image sensor that is constructed to convert a received optical image to a corresponding electrical signal, said TV camera being structured to be optically coupled to said endoscope through said proximal end of said endoscope,

a light source section structured to be optically coupled to said endoscope,

wherein attachment and detachment of said TV camera attachment section effects attachment and detachment of said TV camera and said light source as a unit.

74. (Previously Presented) An endoscope system according to claim 73, further comprising a power supply electrically connected to said TV camera and said light source section, said power supply being external to said TV camera attachment section.

75. (Previously Presented) An endoscope system according to claim 74, further comprising a TV processor external to said TV camera attachment section and in electrical communication with said TV camera to receive electrical signals from said image sensor of said TV camera.

76. (Previously Presented) An endoscope system according to claim 75, further comprising a monitor in electrical communication with said TV processor.

77. (Previously Presented) An endoscope system according to claim 75, wherein said power supply and said TV processor are attached within a common containment structure that is external to said TV camera attachment section.

78. (Previously Presented) An endoscope system according to claim 73, wherein said light source section comprises a plurality of LEDs.